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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,248	08/15/2003	Paul L. DeAngelis	3554.097	1560

30589 7590 03/03/2006

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EXAMINER

NASHED, NASHAAT T

ART UNIT

PAPER NUMBER

1656

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/642,248	DEANGELIS ET AL.	
	Examiner	Art Unit	
	Nashaat T. Nashed, Ph. D.	1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-111 is/are pending in the application.
- 4a) Of the above claim(s) 37,76 and 102-111 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36,38-75 and 77-101 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/1/04 & 1/3/06</u> . | 6) <input type="checkbox"/> Other: _____ |

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Claims 1-111 are pending.

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-36, 38-75, and 77-101, drawn to an enzymatic method for the production of glycoseaminoglycan polymer using the glycosaminglycan of SEQ ID NO: 2, classified in class 435, subclass 97.
- II. Claims 1-36, 38-75, and 77-101, drawn to an enzymatic method for the production of glycoseaminoglycan polymer using the glycosaminglycan of SEQ ID NO: 4, classified in class 435, subclass 97.
- III. Claims 1-36, 38-75, and 77-101, drawn to an enzymatic method for the production of glycoseaminoglycan polymer using the glycosaminglycan of SEQ ID NO: 72, classified in class 435, subclass 97.
- IV. Claims 37, 76, 102-106, 108, 110, and 111, drawn to a biopolymer and drug delivery system, classified in class 536, subclass 123.1.
- V. Claims 107 and 109, drawn to a method of making pharmaceuticals, classified in class 536, subclass 124.

The inventions are distinct, each from the other because of the following reasons:

Inventions I-III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the different inventions are independent methods leading to different product, which is different in structure, using different reagent and steps; and would require separate searches in the patent and non-patent literature.

The methods of inventions I-III and the biopolymer of invention IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product can be made by chemical synthesis.

The methods of inventions I-III and the method of making pharmaceuticals invention IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the different inventions are independent methods having different steps and product; and would require separate searches in the patent and non-patent literature.

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Inventions IV and V are related as product and process of use and a product made. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case, the process for using the product can be practiced with materially different products such as starch, as well as the product can be obtained by different method such as chemical synthesis of the polysaccharide and formulated with an active ingredients.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Kathryn Hester on January 5, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-36, 38-75, and 77-101 as they relate to SEQ ID NO: 2. Affirmation of this election must be made by applicant in replying to this Office action. Claim 37, 76, 102-111 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai*, *In re Brouwer* and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.**

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Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825. In particular, 37 CFR 1.821, which states:

(d) Where the description or claims of a patent application discuss a sequence that is set forth in the "Sequence Listing" in accordance with paragraph (c) of this section, reference must be made to the sequence by use of the sequence identifier, preceded by "SEQ ID NO:" in the text of the description or claims, even if the sequence is also embedded in the text of the description or claims of the patent application.

Thus, each time in the specification wherein a reference to a specific amino acid sequence disclosed in the sequence listing, a sequence identification number should follow, see for example the figure description of Figures 10-19 and 30, Figures 10, 12, 14, 15 and 17 contain amino acid sequences, which are not identified by a sequence identification number in the figures or their description. Claims 12, 49, and 80 contain references to specific proteins, which their amino acid sequence disclosed in the sequence listing, and therefore, the claims are not in compliance with the sequence rules. Applicants are responsible to identify all instances of non-compliance with the sequence rules and perfect their compliance.

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the entire content of Figures 20, 21, 25-29, 31, 32, and 34 a black spot and nothing else could be seen. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

The disclosure is objected to because of the following informalities: The phrase "contains 25, 100" at page 4, last line in paragraph 16, should be ---contains 20-100---. Appropriate correction is required.

Claims 1-36, 38-75, and 77-101 are objected to because they contain non-elected subject matter.

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Applicant is advised that should claims 1-4 and 16-36 be found allowable, claims 38-73 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1-36, 38-75, and 77-101 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The following are the reasons for the rejections:

- (a) The phrase "defined glycosaminoglycan polymer" in claims 1, 38, and 77 renders the claims indefinite because the resulting claim does not set forth the metes and bound of the claimed invention. For examination purposes only, the phrase is taken to mean "hyaluronan" (β 3GlcNAc β 4GlcUA). Since the claimed method is directed to method of making hyaluronan, only two activated sugars are required for the method. They are UDP-GlcUA and UDP-GlcNAc.
- (b) The phrase "glycosaminoglycan-like" in claims 1, 38, 77, and 101 renders the claims indefinite because the resulting claim does not set forth the metes and bound of the claimed invention. The specification does not define the term and one of ordinary skill in the art would not know what it is. For examination purposes, the phrase is taken to mean any polysaccharide.
- (c) The phrase "structure variants or derivative thereof" in claims 1-3, 13-15, 38-40, 50, 51, 77, 81, 82 and 101 renders the claims indefinite because the resulting claim does not set forth the metes and bound of the claimed invention.
- (c) Claims 2, 4, 5, 10, 39, 41, 42, 47, 49, 77, 78, and 80 contain the undefined abbreviations "IdoUA", "HA", PmHAS or PmCS. Abbreviations and acronyms must be defined at least once in the claims.
- (e) The phrases "heprosan-like" in claims 9, 46, and 101 and "non-natural structure" in claims 31, 46, 68, and 93 renders the claims indefinite because the resulting claim does not set forth the metes and bound of the

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claimed invention. The specification does not define the term and one of ordinary skill in the art would not know what it is.

- (f) The phrases "active fragment and mutant thereof" in claims 11 and 101, and "non-natural structure" in claims 31, 46, 68, and 93 render the claims indefinite because the resulting claim does not set forth the metes and bound of the claimed invention.
- (g) The phrase "hybridizing under standard stringent, moderately stringent, or less stringent hybridization conditions" in claims 20, 57, 88 renders the claim indefinite because the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. There are no standard hybridization conditions in the prior art. There are, however, several sets of conditions known in the prior art as highly stringent, moderately stringent and low stringent conditions. The result of a hybridization experiment will depend on the exact hybridization condition used and would vary from one set of stringent condition to another. Thus, the claim is found indefinite. For examination purposes only, the claim is taken to mean any hybridization conditions. The insertion of a specific hybridization conditions in the claim from page 32 and 33, paragraph 122 would obviate this rejection.
- (h) The terms "small size" in claims 74 and 99, and "large size" in claims 75 and 100 are relative terms, which renders the claim indefinite. The terms "small size" and "large size" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.
- (i) Claims 6-8, 12, 16-19, 21-30, 32-36, 43-45, 48, 52-56, 58-67, 69-73, 79, 83-87, 89-92, and 94-98 are included in this rejection because they are dependent on rejected claims and do not correct the deficiencies of the claim from which they depend.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-19, 23-36, 38-56, 60-75, 77-87, and 91-101 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the

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specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1-20, 23-36, 38-57, 60-75, 77-88, and 91-101 are directed to any method of making any glycosidic bond between any UDP-activated sugar and any possible acceptor of any kind using any hyaluronic acid synthase from any source having any specificity for its sugar units as well as any fragments or mutants said transferases. The specification, however, only provides a single representative species from *P. multocida* and a truncated version comprising residues 1-703 of SEQ ID NO: 2. There is no disclosure of any particular structure to function/activity relationship in the single disclosed species. The specification also fails to describe additional representative species of these hyaluronic acid synthase (HAS) by any identifying structural characteristics or properties other than the amino acid sequence recited in claim 21 (SEQ ID NO: 2) or the polypeptide encoding by the nucleic acid sequence of SEQ ID NO: 1 of claim 20, for which no predictability of structure is apparent. Given this lack of additional representative species as encompassed by the claims, Applicants have failed to sufficiently describe the claimed invention, in such full, clear, concise, and exact terms that a skilled artisan would recognize Applicants were in possession of the claimed invention.

Claims 1-20, 23-36, 38-57, 60-75, 77-88, and 91-101 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims are broader than the enablement provided by the disclosure with regard to the a method of utilizing any HAS from any biological or man-made source to make any oligo- and polysaccharide from five activated UDP-sugars and using any functional acceptor. Factors to be considered in determining whether undue experimentation is required are summarized *In re Wands* [858 F.2d 731, 8 USPQ 2nd 1400 (Fed. Cir. 1988)]. The Wands factors are: (a) the quantity of experimentation necessary, (b) the amount of direction or guidance presented, (c) the presence or absence of working example, (d) the nature of the invention, (e) the state of the prior art, (f) the relative skill of those in the art, (g) the predictability or unpredictability of the art, and (h) the breadth of the claim.

The nature and breadth of the claimed invention encompasses the utilization of any HAS isolated from any biological or man-made source in the synthesis of any sugar polymer using any UDP-activated sugars. The specification provides guidance and examples in the form of an assay to use HAS of SEQ ID NO: 2 and its water-soluble form SEQ ID NO: 9 to make hyaluronic acid using UDP-GlcUA and UDP-GlcNAc to form the disaccharide repeat β 3GlcNAc β GlcUA, see pages 35-54. While molecular biological techniques and genetic manipulation to make any construct are known in the prior art and the skill of the artisan are well developed, knowledge regarding the biological or man-made source of HAS, method of designing HAS, nucleic acid

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encoding all possible HAS, substitution, deletion, insertion, and combination thereof mutant, and the three-dimensional structure is lacking. Thus, searching for a HAS from any biological or man-made source, one of its variants capable of making any sugar polymer, or a nucleic acid encoding a HAS activity that hybridizes under any condition to SEQ ID NO: 1 is well outside the realm of routine experimentation and predictability in the art of success is extremely low. The amount of experimentation to identify HAS from a biological source or redesign a HAS to accommodate any substrate is enormous. Since routine experimentation in the art does not include screening large numbers of genomic, cDNA, or man-made DNA libraries where the expectation of obtaining the desired HAS is unpredictable, the Examiner finds that one skilled in the art would require additional guidance, such as information regarding a method of a method to alter the substrate specificity for HAS, a method for redesigning HAS, the biological source of the enzyme, and three-dimensional structure for the protein. Without such guidance, the experimentation left to those skilled in the art is undue.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 10-13, 15-30, 38-42, 47-50, 54-67, 77-81, 85-92 and 101 are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. patent 6,833,264 ('264, Weigel *et al.*).

The '264 patent teaches the hyaluronic acid synthase of *Streptococcus equisimilis* of SEQ ID NO: 2 and *Pasturella multocida* of SEQ ID NO: 9 encoded by the nucleic acid sequences of SEQ ID NO: 1 and 8, respectively, see column 17, last two paragraphs. The amino acid sequence of SEQ ID NO: 9 taught in '264 patent is identical to SEQ ID NO: 2. Using *P. multocida* membrane, the '264 patent teaches the elongation of the membrane polysaccharide (a polymer) with UDP-sugars, a reaction catalyzed by said synthase (claims 1-5, 10-13, 15-30, 33, 38-42, 47-50, 54-67, 77-81,

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85-92 and 101), see column 18, line 40-65 through column 19, line 43, Table II, and Figure 4.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 10-13, 15-30, 38-42, 47-50, 54-67, 77-81, 85-92 and 101 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over DeAngelis, P. (IDS reference DO: Biochemistry **1996**, 35, 9768-9771).

DeAngelis teaches a purified preparation of the hyaluronic acid synthase of the gram-negative bacteria *Pasturella multocida*, see page 9769, right column, fourth paragraph. Also, he teaches a method for elongation of polysaccharide (a polymer) by incorporation of UDP-sugars through the formation of glycosidic bond, which is catalyzed by said synthase, and the catalytic properties of the enzyme, see the last paragraph at page 9769 and Figures 1-4.

The method taught by DeAngelis appears to be identical to the claimed methods. Also, the enzyme taught in the prior art appears identical to the enzyme of the amino acid sequence of SEQ ID NO: 1 which is encoded by the nucleic acid sequence of SEQ ID NO: 2. The patent Office considers a polypeptide purified from its natural source identical to that produced by a recombinant enzyme. The recombinant enzyme has the same metal ion requirement and optimal pH as those reported for the preparation taught by DeAngelis and isolated from the same biological source, compare the result in the application at page 42 and 46. DeAngelis *et al.* (IDS reference: J. Biol. Chem. 273, 8454-8458), reported that the recombinant enzyme from transgenic *E. coli* is similar to that isolated from its natural source; see page 8457, left column, paragraph 1. Thus, the method taught by DeAngelis is identical to the claimed method.

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These rejections are being made under 35 U.S.C. § 102(b) and 35 U.S.C. § 103 because it is not possible for the Examiner to physically compare the claimed method reagents and product and that taught by DeAngelis. Applicant bears the burden of providing evidence, which distinguishes the claimed method from that disclosed by DeAngelis. A preferred means of providing this evidence is for applicant to submit a side-by-side comparison between the method of the prior art including the enzymes of the prior art and the claimed enzyme method which demonstrates any material differences and shows the claimed method to be distinct and unobvious in view of the method and enzyme of the prior art. *In re Best, Bolton, and Shaw* 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald, Sanders and Bagheri* 205 USPQ 594 (CCPA 1980).

Claims 1-5, 10-13, 15-19, 23-30, 38-42, 47-50, 53-56, 60-67, 77-81, 84-87, 91, 92, and 101 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Triscott *et al.* (IDS reference BA: J. Biol. Chem. **1986, 261 (13)**, 6004-6009).

Triscott *et al.* teaches several purified preparation of hyaluronic acid synthase from *Streptococci*, see abstract. Also, they teach method for elongation of polysaccharide (a polymer) by incorporation of UDP-sugars through the formation of glycosidic bond, which is catalyzed by said synthase, see left column, page 6005, the last 3 paragraphs.

The method taught by Triscott *et al.* for making HA appears to be identical to the claimed methods. The patent Office considers a polypeptide purified from its natural source identical to that produced by a recombinant enzyme. The recombinant enzyme has the same metal ion requirement and optimal pH as those reported for the preparation taught by Triscott *et al.*, see the additive in the method taught by Triscott *et al.*. Thus, the method taught by Triscott *et al.* is identical to the claimed method.

These rejections are being made under 35 U.S.C. § 102(b) and 35 U.S.C. § 103 because it is not possible for the Examiner to physically compare the claimed method reagents and product and that taught by Triscott *et al.* Applicant bears the burden of providing evidence, which distinguishes the claimed method from that disclosed by Triscott *et al.* A preferred means of providing this evidence is for applicant to submit a side-by-side comparison between the method of the prior art including the enzymes of the prior art and the claimed enzyme method which demonstrates any material differences and shows the claimed method to be distinct and unobvious in view of the method and enzyme of the prior art. *In re Best, Bolton, and Shaw* 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald, Sanders and Bagheri* 205 USPQ 594 (CCPA 1980).

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11

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F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20, 23-36, 38-57, 60-75, 77-88, and 91-101 are rejected under the judicially created doctrine of double patenting over claims 1-48 of U. S. Patent No. 6,444,447 ('447) since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: The claims of the '447 patent is directed to a method of elongating at least a disaccharide by generating a new glycosidic bond by the reaction of said saccharide with UDP-GluUA and UDP-GlcNAc using the hyaluronic acid synathase of SEQ ID NO: 1, encoded by the nucleic acid sequence of SEQ ID NO: 2. The amino acid sequence of the instant application differs only by two amino acid resides from that of SEQ ID NO: 2 of the instant application and a deletion mutation at the C-terminus of the trans membrane domain (claims 1-19, 23-36, 38-56, 60-75, 77-87, and 91-101). The nucleic acid of SEQ ID NO: 2 of '447 patent is almost identical to residues 1-2112 of SEQ ID NO: 1 of the instant application, and thus, is expected to hybridize to SEQ ID NO: 1 under the most of the stringent conditions (claims 20, 57, and 88). Thus, the nucleic acid sequence of SEQ ID NO: 2 is essentially the same as that of the instant application SEQ ID NO: 2 and would be expected to hybridize under any set of hybridization conditions to SEQ ID NO: 2 of the instant application. Similarly, the amino sequence of SEQ ID NO: 1 of the instant application is considered essentially identical to that of SEQ ID NO: 1 of the '447 patent.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application, which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claims 1-20, 23-36, 38-57, 60-75, 77-88, and 91-101 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable

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over claims 4-10 and 14-19 of allowed copending Application No. 10/197,153 ('153). Although the conflicting claims are not identical, they are not patentably distinct from each other. Claims 4-10 and 14-19 are directed to elongate functional acceptor having at least two sugar units using recombinant, soluble and having empty acceptor site encoded by nucleic acid which hybridizes to the nucleic acid of SEQ ID NO: 2 of '153 application. SEQ ID NO: 2 of the '153 application corresponds to residues 1-2112 of SEQ ID NO: 1 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nashaat T. Nashed, Ph. D. whose telephone number is 571-272-0934. The examiner can normally be reached on MTWTF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleen M. Kerr can be reached on 571-272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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